

*Fontastic*TM

MacintoshTM font editor

User's Guide

Altsys
corp.



Fontastic™

Macintosh™ font editor

USER'S GUIDE

Version 2.0

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FONTastic was developed by Kevin Crowder and Jim Von Ehr. This manual was written by Jim Von Ehr.

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INTRODUCTION

An abundance of character sets, or fonts, is one of the pleasures of the Macintosh computer. Until now, Macintosh owners wishing to partake of this pleasure had to purchase canned character sets or use a balky and undocumented font editor to make their own.

FONTastic™ has been developed to make it easy for every Macintosh user to create a special-purpose character font, or customize an existing font.

In addition to the normal font editing commands which you might expect, FONTastic has the ability to style characters (italics, bold, etc.) and scale a font up or down automatically. For example, to create a smooth New York 48 font for printing, you could double the size of New York 24, then use FONTastic's editing capabilities to smooth the ragged edges. Outlined or shadowed characters don't always look exactly right; with FONTastic, you can tune up any font style perfectly. You could even perform double outlining or similar operations. Fonts may be scaled independently in either axis, so you could exaggerate characters horizontally to make a fat font, or vertically to make a tall font.

We have worked very hard to make FONTastic as easy to use as other top quality Macintosh software, which helps us keep this user's guide short. We believe a printed user's guide is necessary for two reasons. There is some background information about fonts which you should know, and there are a few non-obvious tidbits about FONTastic which are best discussed in a user's guide.

No special knowledge about fonts is required, but we do expect you to basically know how to use your Macintosh. Most of the user interface of FONTastic is similar to MacPaint, so you probably already know most of what you need to know to edit fonts. Terms such as 'double-click', 'dialog box', 'file', etc. are described in the Macintosh manuals, and are not further defined here.

THE HISTORY

The history of the world is a vast and complex subject, encompassing the lives of countless individuals and the events that have shaped our planet. It is a story of human progress, of triumph and adversity, of the enduring quest for knowledge and understanding.

In the beginning, the world was a blank canvas, a vast expanse of land and sea. The first humans emerged, their lives a struggle for survival. They learned to hunt, to gather, to build shelter, and to pass on their knowledge to future generations.

As time passed, the human race grew in number and in complexity. We developed language, art, and science. We built cities, created laws, and explored the world. We have achieved remarkable feats of engineering and discovery, from the pyramids of ancient Egypt to the space shuttle. Yet, we have also known pain, suffering, and war. The history of the world is a tapestry of these contrasting experiences, woven together by the threads of human endeavor.

The history of the world is not just a record of events, but a reflection of the human condition. It shows us the resilience of the human spirit, the capacity for both good and evil, and the enduring hope for a better future. It is a story that continues to unfold, as we move forward into the unknown.

As we look back on the history of the world, we are struck by the vastness of the journey. We are humbled by the scale of the challenges we have overcome and the progress we have made. We are inspired by the courage of the pioneers and the wisdom of the sages. We are reminded that we are all part of a larger whole, and that our actions have the potential to shape the world for generations to come.

Chapter 1

ABOUT FONTASTIC

CONTENTS OF THE DISK

Your release disk contains the FONTastic program, a file with several fonts (named "Fonts"), and the standard Apple System folder.

The Fonts file is compatible with Apple's Font Mover utility, so fonts may be freely moved around by either the Font Mover or FONTastic. You must replace the Font Mover with FONTastic on your font disks. FONTastic and the Font Mover should not coexist on the same disk, since the Finder would become confused about which one to invoke when a font file is opened. If FONTastic is moved to a disk where the Font Mover had once existed, FONTastic's icon may change to look like the Font Mover icon. This is a well-known quirk of the Finder, but does not affect FONTastic operation.

To make it easier for you to use FONTastic, we have not copy protected this disk. We advise you to immediately make a backup copy of the release disk for your protection, and set aside the original disk for disaster recovery. We don't advise you to make copies for your friends; that is theft. We can't run a business without customers, and we can't sell for the price we do without a LOT of customers, so please be honest with us.

HOW TO USE FONTASTIC

FONTastic is invoked either by opening it from the desktop or by opening a font file icon. A font selection window then allows you to choose an existing font file and font (or create a new font). After choosing a font, you are shown a map of the characters in the font. You may edit individual characters from this map, or you may make changes to a range of characters or to the entire font by choosing commands from the pull-down menus.

After editing, you may store the font back where it came from, rename it, move it to another file, or throw your changes away.

The following chapters discuss editing in detail.

Chapter 2

ABOUT MACINTOSH FONTS

FONT TERMINOLOGY

Figure 2-1 provides an illustration of the terms we are going to define in this chapter.

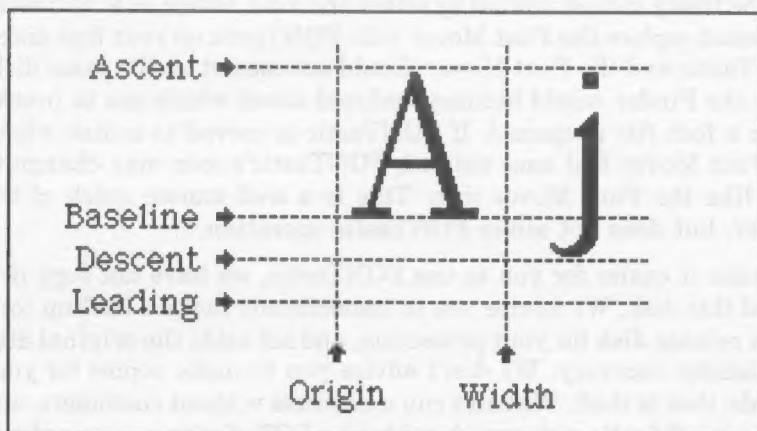


Figure 2-1
Illustration of Terms

Apple documents more features than we do here; see their “Inside Macintosh” book if you really want to explore fonts in detail. FONTastic takes care of a lot of the low-level details automatically, so there is no need to get into those details here.

The font characteristics we care about fall into two groups: those which apply to the entire font, and those which apply to individual characters.

The important font attributes are the font name, its size, and its 'ascent', 'descent', and 'leading'. 'Kerning' also can be set by FONTastic. Important character attributes are the 'origin' and 'width'.

The font name is used to select the font from a menu. It is important to notice that capital letters are distinct from lower case letters. Thus, the system font "Chicago" is not the same as a font named "CHICAGO". You may wish to use a naming convention based on this feature if you have built such a large font that it must be split into more than one piece.

Internally, the Macintosh uses a font ID number, which is built by combining a font number (assigned by Apple) with the font size. FONTastic automatically numbers new fonts starting with font ID 200. When storing a new font, it picks the next font number greater than 200 which doesn't already exist on the destination file. If required, you may override this automatic numbering by typing the desired number in the "Save As..." window.

The font size is measured in points. A point here is distinct from the mathematical concept of a point or a dot on the screen. Our 'point' is a printer's term for a distance of approximately 1/72 of an inch. The declared point size of a font is used by the text drawing routines to select or scale a font. You are familiar with this from the text size menu of MacPaint. The declared font size is not **forced** to have **anything** to do with the actual character size, but is normally defined as the sum of the ascent and descent (more or less). Apple defines the font size as the distance from one ascent line to the next ascent line in single-spaced text.

The baseline of a font is the imaginary line that all capital characters rest on.

The 'ascent' of a font is the distance from the baseline to the top of the highest character in the font.

The 'descent' of a font is the distance from the baseline to the bottom of the lowest descender in the font (such as the bottom of a 'y' or 'j').

The 'leading' (pronounced 'lehding') of a Macintosh font is the space from the descender of one row to the ascender of the next. The typographer's definition of this term is different, but it really doesn't matter; just think of it as a way of spacing one line from the next.

FONTastic allows you to change the baseline, ascent, descent, and leading by grabbing screen indicators with the mouse and dragging them to where you want them. Any time you change these indicators, you are changing the entire font.

'Kerning' is a printer's term to describe overlapping characters. Long ago, when printing was done with metal type, certain letters were notched to fit together more closely. Letter pairs such as 'To' would be 'kerned' together so that the 'o' would nestle under the cap of the 'T'. Things are easier these days, since you can specify kerning by adjusting a control indicator rather than grinding down a tiny piece of metal type.

High quality typography requires kerning tables, which specify kerning values for each character pair. This requires a special text editor which uses the kerning table to calculate where to display the current character based on the previous character. Things are much simpler on the Macintosh, since characters kern a fixed amount regardless of the character to their left. Figure 2-2 shows a kerned character. The 'y' kerns left because part of it lies to the left of the origin marker. The tail of the 'y' thus extends into the character to its left, allowing tighter character spacing. Kerning is set simply by adjusting the origin marker so that one or more columns of character dots lie to the left of the origin marker. The part of the character to the left of the origin marker then kerns into the previous character.

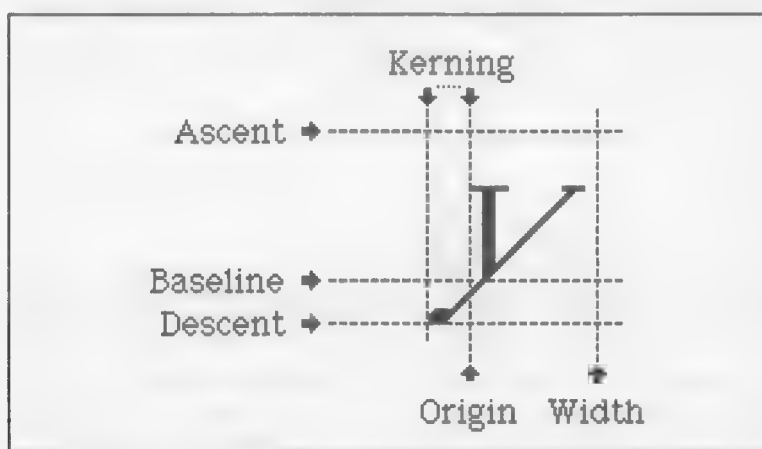


Figure 2-2
Character Kerning

The individual character attributes we care about are 'origin' and 'width'. Both can be adjusted by controls on the screen during character editing, as shown at the bottom of Figures 2-1 and 2-2.

The leftmost control sets the character origin, and the rightmost control sets the character width. If the leftmost character dot is to the right of the origin control, as in Figure 2-1, the character is drawn with blank space ahead of it (this space is called 'offset'). If the leftmost character dot is to the left of the origin control, as in Figure 2-2, the character kerns left, and overlaps the previous character.

'Width' is the distance by which to advance the drawing pen to the next character after drawing the current character. If this is greater than the actual width of the character dots, space is left after that character and before the next character. If the width setting is less than the actual width of the character (an unusual case), the next character will overlap this one. Normally, you would adjust the width control to be at least one column to the right of the last column of the character, so there is a little space between characters. FONTastic allows zero width (overstrike) characters to be defined; simply move the width control on top of the origin control. The next character is then drawn at the same spot as the current one.

When drawing characters, the drawing pen starts at the origin point, on the baseline, and the dots defining the character are copied to the screen. The actual dots making up the character may be drawn to the left or the right of the origin point, depending on whether the character had kerning or offset. After drawing the character, the pen is advanced just to the right of the width marker to prepare for drawing the next character.

Setting the origin and width is described in Chapter 4. The font is stored in a compressed format, so no actual space is taken up by blank columns between the markers and actual dots of the character.

A font has up to 255 characters. Not all characters must be defined in every font; there is a special character called the 'missing character' which is drawn in place of any undefined characters. The missing character is a square box in the standard Macintosh fonts, or a vertical bar in new fonts created by FONTastic. You can edit the missing character of a font by selecting the **Edit Missing** option from the **Special** menu.

Fonts are limited to a maximum size of 32K bytes. This is a generous size for normal fonts, but the limitation may require large fonts to be split into more than one piece. For example, you may have to put capital letters and numbers in one font and lower case letters and special symbols in another. This is only required for very large fonts with a lot of characters defined. Editing such large fonts may require a 512K memory Macintosh if you are to take full advantage of FONTastic's cut & paste, styling, or scaling features. If there is not enough memory to handle it, such operations may fail with a warning message (leaving the font unchanged).

FONT FILES

Font files are basically files which contain only fonts. Special attributes are set by the creating program which identify the file as a font file, so either FONTastic or Apple's Font Mover program is invoked when the file icon is opened.

You would normally keep your fonts on a font file and copy them to the system file for use. It is also possible to copy them to application program files, such as MacWrite. Such fonts are available only to that application, and override any similarly named fonts on the system file.

FONTastic can create new font files from scratch, edit fonts in existing font files, or even edit fonts on non-font files, such as the MacWrite program file. We recommend that you do all your font editing from font files. It is easier to keep up with your fonts that way, and they are transportable to people who haven't yet bought FONTastic.

Chapter 3

GETTING STARTED

FONT SELECTION WINDOW

The font selection window shown in Figure 3-1 is displayed when FONTastic first starts up, or after a font is closed. This versatile window allows you to select a font for editing, change the active font files, copy fonts between files, create a new font, or remove a font.

The two inner windows allow you to open two files at the same time. Each window's file may be changed independently. Each window is titled with the name of the file currently active in that window, and the window shows all fonts in that file. If there are too many fonts to fit in the space, scroll bars are enabled so you may scroll thru the list of font names.

Fonts are selected by clicking on their name with the mouse. A type sample of the selected font is displayed in the lower right corner. Information about the font is displayed in the lower left corner. Buttons in the center allow you to edit, copy, or remove the selected font. You can also select the font and begin editing by double-clicking its name.

Certain fonts are required in the System file; these are marked with an asterisk and may not be deleted.

The system font (Chicago-12) of the startup disk cannot be edited. If you wish to change it, change a copy on another disk (not the startup disk).

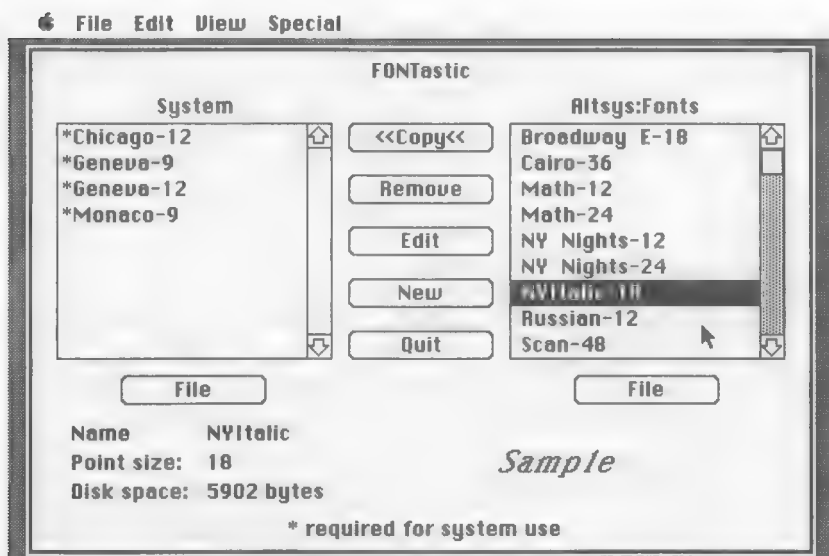


Figure 3-1
Font Selection Window

SELECTING A FILE

Font files are selected for editing either by opening the font file icon from the Macintosh desktop, or by opening FONTastic and selecting the file from the font selection window.

The first way is the easiest; just open the font file, and FONTastic starts up with that file active. If only one file is selected, its fonts are shown in the right window and the **System** file's fonts are shown in the left window. If two files are selected (click on the first, press the **shift** key while you click on the second, choose **Open** from the **File** menu), one is shown on the left and the other is shown on the right.

If you open FONTastic directly, with no files selected, the left window contains the **System** file and the right window contains the **Fonts** file, if there is such a file on your disk.

You can change the active file in either window the same way; click on the **File** button under the window. This brings up the standard file selection window, which works very much like the font selection window. You may scroll thru the list of files on the current disk,

switch between the internal and external drives, or eject the disk so you may insert another one. Select the file you want from the list, then click the **Ok** button to return to the font selection window. The selected file is then opened, and any fonts it contains are listed in the font selection window.

The file named **System** on your startup disk contains the system fonts. You would normally move fonts to the **System** file in order to use them, but this is not required. For example, moving fonts to the MacWrite program file allows those fonts to be used by that customized version of MacWrite without cluttering the system file.

COPYING FONTS

FonTS may be copied from file to file very easily. From the font selection window, open one file window for the source file and the other for the destination file. Select the font name from the source window and click the **Copy** button. The font is copied to the destination file in the other window and given a unique font ID which doesn't conflict with any font already there. If a font with the same name and point size already exists in the destination file, you are asked if you want to replace it. If you answer **Ok**, the duplicate is replaced by the source font, otherwise the **Copy** is not performed.

The copy is always given the same name and point size as the original. The font ID is left unchanged unless there is a numbering conflict in the destination file, in which case the font is renumbered. If you want to change the name, point size, or font ID, you should open the font for edit, then choose the **Save as...** command from FONTastic's **File** menu to save it with a different name, size, or ID.

REMOVING A FONT

To remove a font from a font file, select it, then click the **Remove** button. You are asked to confirm the deletion; click **Ok** and the font is immediately removed from that file. Be sure you have saved a copy of the font somewhere before doing this!

CREATING A NEW FONT

Create a new font by clicking the **New** button in the font selection window. You are asked to enter a font size, then a new, unnamed

font of that size is created and opened for editing. During editing, you may change the size if you wish. When you are ready to save the font, choose the **Save as...** option from the **File** menu. Type the new font name and size into the **Save as...** window, then click **Ok**. The font is saved to the current font file (the file in the rightmost window, if there are two files selected). If you wish to put the font into another file, click the **File** button in the **Save As...** window. This presents a file selection window, which allows you to scroll thru a list of all files on the current disk, eject the current disk, switch between disks, or select a file. After selecting a file, you are returned to the **Save As...** window, which you can complete by clicking the **Ok** button.

CREATING A NEW FONT FILE

Creation of a new font file begins like creation of a new font. Click the **New** button in the font selection window, and edit the font; or select an existing font for editing. Choose the **Save as...** command from the **File** menu, and click the **New File** button in the **Save as...** window. Another window is displayed, into which you may type a new file name. After creating the new font file, FONTastic returns to the **Save as...** window, where you may type the font name and click **Ok** to save it onto the new font file.

SETTING FONT IDS

FONTastic generates font ID numbers in such a way that you normally don't have to worry about this, but sometimes it is necessary to control the font ID. The generated font ID can be changed in the "Save As..." window. Although legal values for font IDs range from 0 to 511, you should not use numbers greater than 255, since Apple's old Font Mover gets confused with larger numbers.

QUITTING FONTASTIC

There are two ways to quit FONTastic. Either choose the **Quit** option from the **File** menu, or click the **Quit** button in the font selection window. FONTastic cleans up, then returns you to the Macintosh desktop, ready to use your new fonts.

Chapter 4

EDITING A CHARACTER

CHARACTER SELECTION

A window like that shown in Figure 4-1 is displayed after a font is opened.

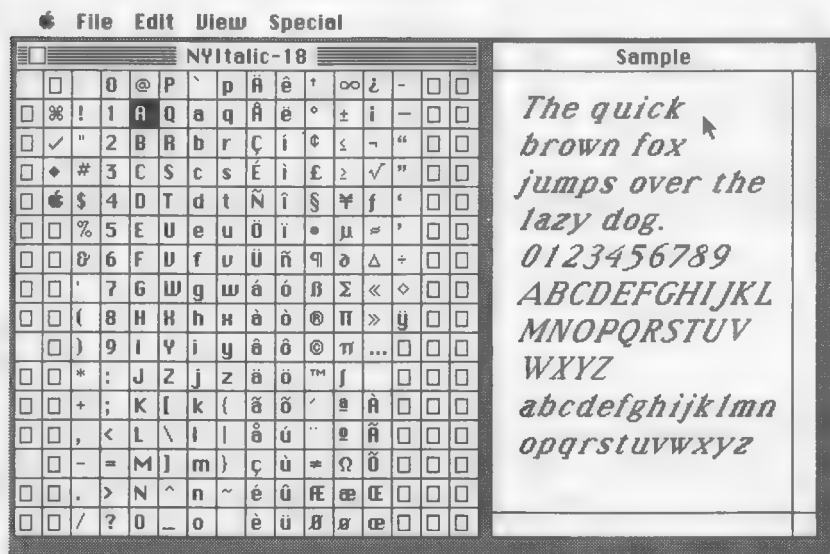


Figure 4-1
System View of Font Characters

The window in Figure 4-1 shows all of the character positions as they are defined in the system font. Undefined characters are displayed as boxes. Pulling down the **View** menu shows that this is the **System** view.

You may change the display to an actual view of the characters in the edit font by choosing **Actual** from the **View** menu. This display is shown in Figure 4-2. Note that undefined characters are displayed as gray boxes in the actual view so they show up more clearly.

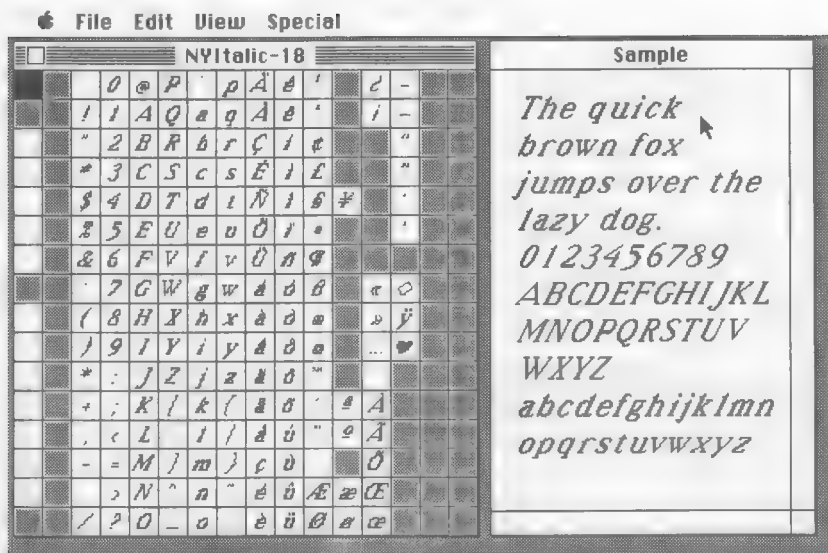


Figure 4-2
Actual View of Font Characters

In either view, the selected character or range of characters is shown by inverted colors in the selected character boxes. Selections remain valid when the view is changed, so you can mark a character in one view and flip to the other view to verify that it is in the right place relative to the other characters.

CHARACTER EDITING

To edit a character, select it from the font view window, then choose **Open** from the **File** menu (or just double-click the character). Alternatively, typing a character on the keyboard closes any open character and activates the typed character.

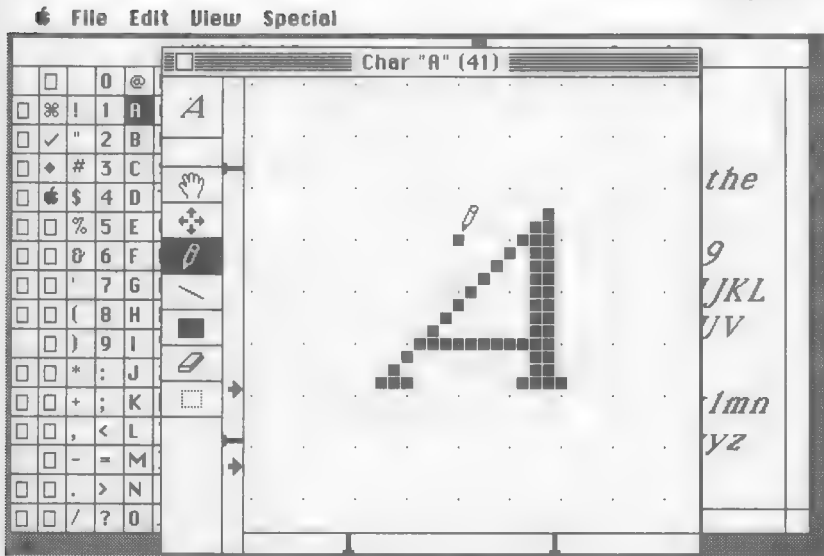


Figure 4-3
Character Editing Window

Editing a character works very much like drawing with MacPaint. The character edit window is divided into several sections. The large central area displays an enlarged picture of the character which is eight times actual size. An actual size image of the character is displayed in the upper left corner. Down the left side is a selection of drawing tools. A narrow window just to the left of the large central area displays controls for adjusting ascent, descent, baseline, and leading. A short window along the bottom displays controls for adjusting the character origin and width.

The character edit window is opened with the pencil tool active. Pressing the mouse button while the pencil is active changes the color of the character dot under the pencil from black to white, or white to black. The pencil continues to draw dots in that color until you release the mouse button. The pencil can both draw and erase, so most editing can be done by using just the pencil.

Several other tools are shown in the tool window. Use the eraser to erase large areas. The hand allows you to scroll characters too large to fit into the character edit window. The four-arrow tool scrolls the character's dots within its character box.

The line and box tools allow you to draw straight lines or rectangular boxes. Move the cursor to the starting position and press the mouse button to start drawing. With the mouse button held down, move the cursor to the ending position and release the mouse button to end the line or box.

The dashed box allows rectangular areas to be selected for cutting or pasting. See the section on cut and paste for more details.

No tool can draw above the ascent line or below the descent line, but tools can automatically extend the character to the left or right if drawing is done in that area. The character is packed back down to a minimum width when it is closed.

A shortcut allows any tool to function as a scrolling hand; while the **option** key is pressed, the current tool changes to a hand. You can scroll the window to where you want it, then release the option key and continue editing without having to change tools.

Press the shift key and the mouse button together to constrain a tool to horizontal or vertical motion only.

Change whether a line grid is displayed in the character edit window with the **Grid On** or **Grid Off** toggles in the **View** menu.

CHANGING ORIGIN AND WIDTH

To adjust the origin or width markers, position the cursor on the desired control. Press the mouse button, hold it down while dragging the control to its new location, then release the mouse button. Dashed lines are shown while the control is being dragged, so you can line up the control with the dots in the character.

Moving both controls on top of each other causes the character to have zero width. By positioning the controls to the left or right of the character dots, you can cause this character to overlap the character to its right or left. If both controls overlap, the origin control must be moved to the left before the width control can be moved in either direction.

CHANGING ASCENT, ETC.

Change the ascent, descent, baseline, or leading by dragging the appropriate control in the vertical control window. The ascent and descent controls are indicated by bars. The baseline and leading are both arrows. If leading and descent controls coincide (leading is zero), adjusting the appropriate control is delicate. You must have the cursor positioned on the arrowhead for leading, or on the leftmost part of the bar for descent.

Any change to the controls in the vertical control window affects the entire font, so take care. If you reduce the ascent or descent too much, you could lose the top or bottom rows of every character, and you would have to **Revert** to a previously saved version of the font. FONTastic warns you if this is about to happen, and you can respond **Ok**, to do the operation anyway, or **Cancel**, to stop it before it loses anything. If you reply **Ok**, **Undo** cannot be used to recover the lost rows.

UNDO AND REVERT

The **Undo** command (in the **Edit** menu) allows you to undo the effect of the last operation you performed with the current tool. **Revert** (in the **File** menu) takes you back to the character as it was when you last opened it for editing, or last did a character **Save**.

CUT AND PASTE

Select the **Cut**, **Copy**, or **Paste** option from the **Edit** menu when in the *character* edit window to perform *bit-level* cut and paste. *Character* cut and paste in the 16x16 *font* edit window is described in the next chapter. Bit-level operations allow characters to be cut from MacPaint and pasted into a font, or vice-versa. You can also cut and paste rectangular areas from character to character.

The dashed box tool is used to select a rectangular area in the current character. This works like MacPaint's selection rectangle, except

the selected bits cannot be dragged or scaled. After selecting an area, you may **Cut**, **Copy**, or **Clear** it. The cut area may be pasted into another character, or into other files (such as MacPaint documents).

By default, **Paste** aligns the top left corner of the pasted data with the top left corner of the current character, and scales to the height of the font. If a single character dot is selected before pasting, the top left corner of the pasted information is aligned with that dot and no scaling is performed. If a rectangular area is selected, the pasted data is scaled to fit into the selected area. If the pasted data isn't where you want it, **Undo** the paste, select the correct dot, and paste again.

Chapter 5

EDITING THE FONT

SELECTING

Selecting a character or range of characters is necessary before cutting, copying, styling, or clearing characters in the font window. A character must also be selected before opening it for editing, but usually character editing is done by double-clicking the character, which selects and opens in one operation.

A single character is selected from the font view by positioning the cursor on it and clicking the mouse button. A range of characters may be selected by positioning the cursor on the starting character, then pressing the mouse button and dragging to the ending character before letting up on the mouse button. The current selection may be extended by pressing the shift key while moving the cursor to the new ending character. All characters in the font may be selected by choosing the **Select All** command from the **Edit** menu.

STYLING

FONTastic styling commands allow any standard Macintosh text styling to be applied to selected characters. This makes it possible to create perfect italic and other custom faces by editing the styled characters.

After selecting the character or range to be styled, choose the **Style...** option from the **Special** menu. A selection box is displayed, and you may check the styling features you wish to have applied. When you click the **Ok** button, the styling is performed.

Three styling variations are displayed in this box that don't show up in most other text styling menus. **Expand** adds a little to the width of each character, so characters are spaced slightly further apart. **Condense** narrows each character. **Invert** flips black to white, and white to black.

Each time you perform character styling, the selection box starts out with no styling variations selected. This allows you to make styling variations to a character one variation at a time, or even make a change multiple times (super-bold or super-italic for example). Once a character has been styled, you cannot unstyle it, except by **Undoing** or **Reverting**. FONTastic styling is thus unlike styling in other Macintosh programs, which leave the original character definition unchanged.

The ascent or descent of a font may be too small to perform the requested styling operation without losing the top or bottom of the styled character. If this occurs, an alert box is displayed which tells you what is going to happen, and offers a choice between automatically fixing the ascent or descent so nothing is lost, proceeding with the operation anyway, or cancelling the operation.

SCALING

The entire font may be scaled automatically by choosing the **Scale Font...** command from the **Style** menu. A window is displayed which tells the current size of the font and asks for a new size. The horizontal and vertical sizes are entered separately, so you may scale more in one direction than in the other. The new size may be larger or smaller than the current size; the scaling is based on the ratio of the two numbers. Both numbers must be greater than 0, and less than 128.

Scaling just a few letters of a font can best be done by using the scaling feature of the bit-level cut and paste operation (while in the character edit window). First, cut the character to be scaled. Next, draw the desired size of selection box in the destination character. Finally, paste the previously cut character into that box.

UNDO AND REVERT

Undo and **revert** allow you to gracefully recover from mistakes or ideas which didn't work out. When the font window is active, **Undo** reverses the effect of the last change made to the font. This includes all the features described in this chapter. **Undo** cannot be undone.

Revert allows you to throw away all changes made to the font since you started editing. It works the same as a close without save followed by an open of the same font.

CUT AND PASTE

A character or range of characters may be cut out of a font and pasted back into that font or another font. To do this, first select the characters to be copied, then choose **Copy** or **Cut** from the **Edit** menu. **Copy** puts a copy in the paste buffer, but leaves the selected characters as they are. **Cut** makes a copy and clears the selected characters. **Clear** does not make a copy, but clears the characters by making them undefined in the font.

To paste the characters in the font, select the starting character position to be pasted into, and choose the **Paste** option from the **Edit** menu. The contents of the paste buffer are pasted into the font starting at the selected character. If a rectangular range of characters was copied, a rectangular range with the same dimensions is pasted back. If there is no space available in which to paste the characters, they are skipped. For example, if you copy a full column of characters but paste it into the font starting halfway down, only the top half of the column is pasted; the bottom half is ignored because there is no place to put it.

During a paste, the pasted characters are scaled so their new height matches the height of the destination font. The width is scaled by the same factor as the height.

CHANGING SAMPLE TEXT

The standard Macintosh text editing commands are active in the sample window, so you can type any text you wish into this window. The sample window itself may be made larger or smaller by adjusting the grow box in its lower right corner.

Chapter 6

HELPFUL TIPS

- 1) On a 128KB Mac, large fonts may cause some problems. The most often seen problems are an inability to see a sample of the font you have selected from the Mover window (it gets displayed in a magnified Geneva font instead), or inability to edit a desired font. These problems are caused by memory space conflicts, and normally can be corrected by quitting FONTastic and restarting. The problems usually only show up after several fonts have been edited.
- 2) Before cutting letters from MacPaint, draw guidelines for ascent and descent. Cut each letter with the lasso, and include a small piece of the ascent and descent guidelines with the letter shape. Since the paste scales the full height of the cut letter (including guidelines) into the full height of the destination font, this guarantees proper scaling for every letter in the font. The width is scaled automatically by the same proportions as the height. Once you understand it, you can use the scaling feature to advantage to get other special scaling effects during paste.
- 3) Don't use special characters in font names. In particular, parentheses or slashes cause problems in any Macintosh software which uses font menus.
- 4) Remember that the printer tries to use a font twice the size of the displayed font for increased printing resolution. If you change a font named 'Myfont-12', and have a font named 'Myfont-24' on the disk, your changes will not show up in printed output unless you also change 'Myfont-24'. If you don't have a 'Myfont-24', the printer doubles 'Myfont-12', so the changes show up (but will be printed with less resolution than the printer is capable of). For the best resolution in printing, always make a font twice the size of any you use, and smooth its edges as much as possible.

5) FONTastic works with the 'Switcher' program. Switcher allows you to run several programs at once on a 512KB Mac. Running FONTastic and MacPaint together makes character cut and paste from Macpaint much easier. Be sure you select the **always convert clipboard** option of Switcher. The minimum amount of memory FONTastic can run with is 128KB, but 192KB or 256KB is recommended. Be VERY cautious if running more than one copy of FONTastic simultaneously. Do not attempt to make edits or copy fonts to a file opened in more than one Switcher partition. There is no synchronization between the multiple copies of FONTastic, so the second time you write or copy to the file, it will be totally destroyed. As long as you only do saves or copies from one Switcher partition, you should have no problems.

6) Figure 6-1 shows how the keyboard maps to the font. The left half of the table shows the obvious characters, but the right half requires multiple key sequences. Codes starting with **O-** mean press **Option** and the letter following the dash together, let up both, then press the other letter in the box. Codes starting with **S-O** mean press **Shift** and **Option** and the other letter in the box simultaneously. Codes starting with **Opt** mean press **Option** and the other key simultaneously.

KeyMap-12															
			0	@	P	`	p	o·u A	o·i e	OPT t	OPT 5	S-O /	OPT -	S-O 7	S-O k
		!	1	A	Q	a	q	S-O a	o·u e	S-O 8	S-O =	OPT 1	S-O -	S-O 9	S-O l
		"	2	B	R	b	r	S-O c	o·e i	OPT 4	OPT ,	OPT l	OPT [	S-O 0	S-O ;
		#	3	C	S	c	s	o·e E	o·i i	OPT 3	OPT .	OPT v	OPT [	S-O w	S-O z
		\$	4	D	T	d	t	o·n N	o·i i	OPT 6	OPT y	OPT f	OPT]	S-O e	S-O x
		%	5	E	U	e	u	o·u O	o·i i	OPT 8	OPT m	OPT x	OPT]	S-O r	S-O b
		&	6	F	V	f	v	o·u U	o·n n	OPT 7	OPT d	OPT j	OPT /	S-O t	S-O n
		'	7	G	W	g	w	o·e a	o·e o	OPT s	OPT w	OPT \	S-O v	S-O y	S-O m
		(	8	H	X	h	x	o·i a	o·i o	OPT r	S-O p	S-O /	o·u y	S-O u	S-O ,
		)	9	I	Y	i	y	o·i a	o·i o	OPT g	OPT p	OPT ;	S-O ,	S-O i	S-O .
		*	:	J	Z	j	z	o·u a	o·u o	OPT 2	OPT b	OPT SPC	S-O 1	S-O s	OPT h
		+	;	K	[	k	{	o·n a	o·n o	o·e e	OPT 9	o·i A	S-O 2	S-O d	OPT k
		,	<	L	\	l	|	OPT a	o·e u	o·u u	OPT 0	o·n A	S-O 3	S-O f	
		-	=	M	]	m	}	OPT c	o·i u	OPT =	OPT z	o·n 0	S-O 4	S-O g	
		.	>	N	^	n	~	o·e e	o·i u	S-O ,	OPT ,	S-O q	S-O 5	S-O h	
		/	?	O	_	o		o·i e	o·u u	S-O o	OPT o	OPT q	S-O 6	S-O j	

Figure 6-1
Keyboard Mapping





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